

Background: Despite the advances of percutaneous coronary intervention (PCI), suboptimal reperfusion can be caused by microcirculatory damage and distal embolization of plaque and/or thrombus in acute myocardial infarction. Therefore, we investigated the predictors of microcirculatory dysfunction and subsequent clinical outcomes in patients with ST-Segment elevation myocardial infarction (STEMI). **Methods:** We performed successful primary PCI under the intravenous administration of nicorandil 12mg for 337 consecutive patients with STEMI. Data on ST-segment resolution (STR) on electrocardiography and the incidence of adverse cardiac events were analyzed. **Results:** Table lists odds ratio for prediction of complete STR. Furthermore, metabolic syndrome and baseline anemia remained independent predictors of adverse cardiac events on multivariate Cox proportional hazard analysis [hazard ratio 2.44 (95% confidence interval (CI): 1.05 to 5.56, $p = 0.01$) and 2.58 (95% CI: 1.01-6.60, $p = 0.048$), respectively]. **Conclusion:** Metabolic syndrome and baseline anemia are independently related to microcirculatory impairment and subsequent poorer prognosis. Clustering of risk factors for cardiovascular diseases and the decreased oxygen delivery might exacerbate microvascular function.

Table. Odds ratio for prediction of complete ($\geq 50\%$) ST-segment resolution

	univariate		multivariate	
	Odds ratio (95% CI)	p value	Odds ratio (95% CI)	p value
Age (≥ 75 years old)	0.98 (0.58-1.98)	0.93		
Anemia (Hb < 13g/dL in men and < 12g/dL in women)	0.51 (0.29-0.91)	0.03	0.53 (0.31-0.92)	0.03
Hypertension	1.41 (0.89-2.24)	0.18	1.27 (0.76-2.05)	0.36
Dyslipidemia	0.77 (0.47-1.27)	0.37		
Diabetes mellitus	1.16 (0.72-1.87)	0.62		
Obesity (body mass index ≥ 25)	0.87 (0.50-1.52)	0.74		
Current smoking	1.32 (0.81-2.17)	0.32		
Metabolic syndrome	0.51 (0.32-0.83)	0.02	0.50 (0.34-0.89)	0.02
Stress hyperglycemia on admission (≥ 180 mg/dl)	1.41 (0.83-2.38)	0.26		
Killip class ≥ 2	0.77 (0.45-1.30)	0.40		
Estimated glomerular filtration rate (< 60 ml/min/1.73m ²)	1.08 (0.65-1.81)	0.86		
Preinfarction angina pectoris	1.25 (0.77-1.76)	0.61		
Reperfusion time (< 6 h)	2.28 (1.26-4.12)	0.01	2.32 (1.23-4.34)	0.01
Use of mechanical aspiration	1.36 (0.48-3.84)	0.77		